AMENDMENTS TO THE SPECIFICATION:

Amend the specification as follows:

Paragraph starting at line 3 on page 5 has been amended as indicated below:

In many semiconductor optical devices, an active layer for interaction with light is sandwiched between p- and n-type clad layers having a wider band gap than that of the active layer to form a pn diode structure. Forward current is ~~flowed~~ caused to flow through the diode to stimulate radiative recombination of electrons and holes in the active layer.

Paragraph starting at line 21 on page 5 has been amended as indicated below:

On the active layer 4, a p-type InP clad layer 5 is epitaxially grown to a thickness of 3 μm, for example. On the clad layer 5, a p-type $In_{0.53}Ga_{0.47}As$ contact layer 7 is epitaxially grown to a thickness of 0.5 μm for example. The p-type impurity concentration of the clad layer 5 is, for example, 1×10^{18} cm^{-3}, and the p-type impurity concentration of the contact layer 7 is, for example, 1×10^{19} cm^{-3}.

Paragraph starting at line 3 on page 9 has been amended as indicated below:

Reverting to Fig. 2A, after the quantum dot layer 42 is formed, a barrier layer 43 is formed having a thickness of, for example, about 30 nm. On the barrier layer 43, a quantum dot layer 44 is formed and a barrier layer 45 is formed on the quantum dot layer 44. Similarly, a quantum dot layer

46 and a barrier layer 47 are formed. The quantum dot layers 44 and 46 are similar to the quantum dot layer 42. The barrier layers 43, 45 and 47 are made of the same material as that of the barrier layer 41. [[Since]] <u>Because</u> the quantum dot layer has a band gap narrower than that of the barrier layer, the conduction band structure is as shown on the right side of Fig. 2A. As shown, the lowest and highest barrier layers may be made thick.

Paragraph starting at line 13 on page 11 has been amended as indicated below:

Fig. 2D is a graph showing the relation between lattice constants and band gaps of a substrate S, a barrier layer B and quantum dots QD. For the quantum dots QD, the lattice constant is a value in a bulk state and the band gap is a value under the quantum effect and strain. The substrate S and barrier layer B are lattice matched or substantially lattice matched. The quantum dots QD are lattice mismatched and [[has]] <u>have</u> a smaller lattice constant. The band gap becomes narrower in the order of the substrate S, barrier layer B and quantum dots QD.

Paragraph starting at line 4 on page 12 has been amended as indicated below:

Fig. 3A is a graph showing the relation between lattice constants and band gaps of a substrate S, a barrier layer B, quantum dots QDT with tensile strain and quantum dots QDC with compressive strain. For the quantum dots, the lattice constant is a value in a bulk state and the band gap is a value under the quantum effect and strain. The relation of the substrate S, barrier layer B and quantum dots QDT with tensile strain is the same as that of the substrate S, barrier layer B and quantum dots

QD shown in Fig. 2D. The quantum dots QDC with compressive strain [[has]] <u>have</u> a lattice constant larger than that of the substrate S and the same band gap as that of the quantum dots with tensile strain.